UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,982	02/11/2004	David P. Gurney	BCS03463	4523

43471 7590 06/29/2009

Motorola, Inc.
Law Department
1303 East Algonquin Road
3rd Floor
Schaumburg, IL 60196

EXAMINER	
TAYONG, HELENE E	
ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
06/29/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing.US@motorola.com

Office Action Summary	Application No.	Applicant(s)	
	10/776,982	GURNEY ET AL.	
	Examiner	Art Unit	
	HELENE TAYONG	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,13,14,16-22,24,25 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,13,14,16-22,24,25 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/11/04* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed on 04/07/09. Claims 1-11,13-14,16-22, 24-25 and 27 are pending in this application and have been considered below.

Response to Arguments

2. *(1)* **Applicants arguments**: *Claims 1 and 16 are amended to recite "comparing a result from said lower order modulation and correlation process to a result of said higher order modulation and correlation process." Claims 1 and 16 are amended to incorporate the subject matter of claim 6, which is indicated as being allowable by the Office Action. Thus, no new matter is added. Claims 4-6 are amended to be consistent with claim 1 as amended. Claim 7 is amended to change dependency from claim 6 to claim 5. Claim 11 is amended to incorporate the subject matter of claim 15, which is indicated as being allowable by the Office Action; claim 15 is canceled. Claim 18 is amended to be consistent with claim 16 as amended. Claim 22 is amended to incorporate the subject matter of claim 26, which is indicated as being allowable by the Office Action; claim 26 is canceled.*

Examiner's response: The amended claims do not place this application in a condition for allowance. The entire claim 6 with all limitations objected to in previous Office action "*The method of claim 5, further comprising: comparing a result from a DBPSK correlation to a result from a CQPSK correlation; and if said result from said CQPSK correlation comprises a CQPSK sync word result, using said CQPSK sync*

word correlation result to demodulate said burst" was not incorporated into the new amended claims 1, 11, 16 and 22.

(2) **Applicants arguments** regarding the rejection of claims 1-3, 8-10,16-17 and 20-21 under 35 U.S.C. 103(a) as being unpatentable over Horne et al (US 7133440) in view of Dent (US 20010001008) have been considered but are moot in view of the new ground(s) of rejection because of amendments.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-10 and16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labedz et al (US 4847869) in view of Dent (US 20010001008).

(1) with regards to claims 1 and 16;

Labedz et al a method /device (system) (see abstract) for improving burst acquisition (fig. 4) in a digital communication device (figs. 2A, 2B, 3 and 5A) comprising:

receiving a signal (figs.2A, 3, (y(t)); and

performing a sync word search on said signal (figs, 2A, 213, 215, fig. 3, 115);

wherein said sync word search includes performing a hybrid synchronization technique (fig. 2A I sync word and Q sync word), said hybrid synchronization

technique including both a modulation detection and correlation process (213, 313), and a modulation detection and correlation process (215, 315); and

comparing a result from said (213, 313) modulation and correlation process to a result of said (215, 315) modulation and correlation process (fig. 3, 115, fig. 5A, 511,513,515,517,519).

Labedz et al discloses all of the subject matter disclosed above, but specifically teaching that the modulations are lower order and higher order.

However, Dent in the same endeavor discloses a receiver that enables different types of modulation to be alternatively utilized in a same apparatus (see abstract). In fig. 2 a dual GMSK modulator (110 is disclosed) is used for a burst signal (107) with sync word . Further Dent disclosed that the receiver could relatively easily perform sync correlation (channel estimation) using both syncwords, and use that syncword which gives the highest correlations as an indication of whether an 0-16QAM (higher order modulation) or a GMSK (lower order modulation) demodulator will be used for that burst (page 4, [0046]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Dent in the method and system of Labedz et al in a manner as claimed in this application for the benefit of compensating multipath propagation and other causes of ISI.

(2) with regards to claims 2, 3 and 17;

Labedz et al discloses wherein said modulation detection and correlation process comprises performing a biphase shift keying (BPSK) sync word correlation process (figs. 2A, 3 and 5A , col. 1, lines 13-15).

Labedz et al discloses wherein said modulation detection and correlation process comprises performing a quadrature phase shift keying (QPSK) sync word correlation process as applied in claim 3 (figs. 2A, 3, 5A, col. 3, lines 10-13).

Labedz et al discloses all of the subject matter disclosed above, but specifically teaching that the modulations are lower order and higher order.

However, Dent in the same endeavor discloses a receiver that enables different types of modulation to be alternatively utilized in a same apparatus (see abstract). In fig. 2 a dual GMSK modulator (110 is disclosed) is used for a burst signal (107) with sync word . Further Dent disclosed that the receiver could relatively easily perform sync correlation (channel estimation) using both syncwords, and use that syncword which gives the highest correlations as an indication of whether an 0-16QAM (higher order modulation) or a GMSK (lower order modulation) demodulator will be used for that burst (page 4, [0046]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Dent in the method and system of Labedz et al in a manner as claimed in this application for the benefit of compensating multipath propagation and other causes of ISI.

(3) with regards to claims 4 and 18;

Labedz et al discloses using said result (fig. 5A, 511) of (I channel, 213,313) modulation detection and correlation process to modify said result of said (215,315) modulation detection and correlation process.

Labedz et al discloses all of the subject matter disclosed above, but specifically teaching that the modulations are lower order and higher order.

However, Dent in the same endeavor discloses a receiver that enables different types of modulation to be alternatively utilized in a same apparatus (see abstract). In fig. 2 a dual GMSK modulator (110 is disclosed) is used for a burst signal (107) with sync word . Further Dent disclosed that the receiver could relatively easily perform sync correlation (channel estimation) using both syncwords, and use that syncword which gives the highest correlations as an indication of whether an 0-16QAM (higher order modulation) or a GMSK (lower order modulation) demodulator will be used for that burst (page 4, [0046]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Dent in the method and system of Labedz et al in a manner as claimed in this application for the benefit of compensating multipath propagation and other causes of ISI.

(4) with regards to claims 5 and 19;

Labedz et al discloses wherein said result (fig. 5A, 511) of said (215,515) modulation detection and correlation process is utilized to supersede said result of said (213,313) modulation detection and correlation process (fig. 5A, 513,517, 515 and 519).

Labedz et al discloses all of the subject matter disclosed above, but specifically teaching that the modulations are lower order and higher order.

However, Dent in the same endeavor discloses a receiver that enables different types of modulation to be alternatively utilized in a same apparatus (see abstract). In fig. 2 a dual GMSK modulator (110 is disclosed) is used for a burst signal (107) with sync word . Further Dent disclosed that the receiver could relatively easily perform sync correlation (channel estimation) using both syncwords, and use that syncword which gives the highest correlations as an indication of whether an 0-16QAM (higher order modulation) or a GMSK (lower order modulation) demodulator will be used for that burst (page 4, [0046]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Dent in the method and system of Labedz et al in a manner as claimed in this application for the benefit of compensating multipath propagation and other causes of ISI.

(5) with regards to claim 6;

Labedz et al discloses all of the subject matter disclosed above, but specifically teaching wherein if said result from said CQPSK correlation comprises a CQPSK sync word result, using said CQPSK sync word correlation result to demodulate said burst.

However, Dent in the same endeavor discloses a receiver that enables different types of modulation to be alternatively utilized in a same apparatus (see abstract). In fig. 2 a dual GMSK modulator (110 is disclosed) is used for a burst signal (107) with sync

word . Further Dent disclosed that the receiver could relatively easily perform sync correlation (channel estimation) using both syncwords, and use that syncword which gives the highest correlations as an indication of whether an 0-16QAM (higher order modulation) or a GMSK (lower order modulation) demodulator will be used for that burst (page 4, [0046]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Dent in the method and system of Labedz et al in a manner as claimed in this application for the benefit of compensating multipath propagation and other causes of ISI.

(6) with regards to claim 7;

Labedz et al discloses all of the subject matter disclosed above, but specifically teaching using a sync word result from said DBPSK correlation if said result from said CQPSK correlation is not a sync word result.

However, Dent in the same endeavor discloses a receiver that enables different types of modulation to be alternatively utilized in a same apparatus (see abstract). In fig. 2 a dual GMSK modulator (110 is disclosed) is used for a burst signal (107) with sync word . Further Dent disclosed that the receiver could relatively easily perform sync correlation (channel estimation) using both syncwords, and use that syncword which gives the highest correlations as an indication of whether an 0-16QAM (higher order modulation) or a GMSK (lower order modulation) demodulator will be used for that burst (page 4, [0046]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Dent in the method and system of Labedz et al in a manner as claimed in this application for the benefit of compensating multipath propagation and other causes of ISI.

(7) with regards to claim 8;

Labedz et al discloses all of the subject matter disclosed above, but specifically teaching performing said lower order modulation detection and correlation process prior to said higher order modulation detection and correlation process.

However, Dent in the same endeavor discloses a receiver that enables different types of modulation to be alternatively utilized in a same apparatus (see abstract). In fig. 2 a dual GMSK modulator (110 is disclosed) is used for a burst signal (107) with sync word . Further Dent disclosed that the receiver could relatively easily perform sync correlation (channel estimation) using both syncwords, and use that syncword which gives the highest correlations as an indication of whether an 0-16QAM (higher order modulation) or a GMSK (lower order modulation) demodulator will be used for that burst (page 4, [0046]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Dent in the method and system of Labedz et al in a manner as claimed in this application for the benefit of compensating multipath propagation and other causes of ISI.

(8) with regards to claims 9 and 20;

Labedz et al further discloses performing a squelching function on said received signal prior to said sync word search (figs. 3, 115, 511, col. 3, lines 36-57).

(9) with regards to claims 10 and 21;

Labedz et al further discloses wherein said sync word search (fig. 3, 115) is not performed until a multi-step burst detection process detects a burst (figs. 3, 115, 511, col. 3, lines 36-57).

5. Claims 11, 13-14, 22, 24-25 and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over Labedz et al (US 4847869) in view of Rostany et al (US 5970399).

(1) with regards to claims 11 and 22;

Labedz et al further discloses a method for improving burst (rapid phase acquisition) detection in a digital receiver device (figs. 2A, 2B, 3 and 5A), comprising:

receiving a signal (fig. 3, y(t)); and

performing a multi-step (I and Q) burst detection process on said signal (figs. 2A, 2B, 3 and 5A);

wherein the multi-step(I and Q) detection process further comprises:

measuring a signal energy (313 and 315);

comparing said signal energy to a designated signal energy threshold value (col.3, lines 35-57);

measuring large amplitude signal (320,322);

comparing said amplitude signal to a designated threshold value (115, col. 3, lines 27-57, col. 5, lines 45-66); and

signaling a valid burst detection (col. 6, lines 6-14) if said signal energy exceeds said designated signal energy threshold value (predetermined threshold) for a first predetermined period of time and said amplitude signal exceeds said designated threshold value for a second predetermined period of time, wherein said first predetermined period of time and said second predetermined period of time comprise a majority of all expected burst duration (fig. 3, 115, col. 6, 1-48-67, col.7, lines 1-11, see fig. 5A).

Labedz et al discloses all of the subject matter discussed above, but for specifically teaching measuring a signal carrier to noise plus interference ratio (CIR);

However, Rostany et al in the same endeavor (detection) discloses in (figs. 1, (106),(108), 2,(206), (208), fig. 6, step 613-615), measuring energy and a squelching function that compares the energy measurement signals to a predetermine threshold (col. 4, lines 5-53) and in (fig. 5), a two threshold function is used (col. 6, lines 26-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Rostany et al in the system of Labedz et al in a manner as claimed in this application for the benefit of removing interference present in system.

(2) with regards to claims 13 and 25;

Labedz et al further discloses wherein said designated signal energy threshold value comprises a first signal energy threshold that is utilized to detect a presence of said signal if said signal is currently undetected, and a second signal energy threshold that is utilized to detect the absence of said signal if said signal is currently detected (figs. 2A, 3 and 5A, col. 3, lines 50-57, col. 8, lines 62-67, col. 9, lines 1-14).

(3) with regards to claim 14;

Labedz et al discloses wherein said designated threshold value comprises a first threshold that is utilized to detect the presence of said signal if said signal is currently undetected, and a second threshold that is utilized to detect the absence of said signal if said signal is currently detected (figs. 2A, 3 and 5A, col. 3, lines 50-57, col. 8, lines 62-67, col. 9, lines 1-14).

Labedz et al discloses all of the subject matter discussed above, but for specifically teaching measuring a signal carrier to noise plus interference ratio (CIR);

However, Rostany et al in the same endeavor (detection) discloses in (figs. 1, (106),(108), 2,(206), (208), fig. 6, step 613-615), measuring energy and a squelching function that compares the energy measurement signals to a predetermine threshold (col. 4, lines 5-53) and in (fig. 5), a two threshold function is used (col. 6, lines 26-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the method as taught by Rostany et al in the system of Labedz

et al in a manner as claimed in this application for the benefit of removing interference present in system.

(4) with regards to claim 24;

Labedz et al further discloses wherein said programmable signal energy 115, col. 5, lines 32-43) threshold value comprises a first signal energy threshold that is utilized to detect a presence of said signal if said signal is currently undetected, and a second signal energy threshold that is utilized to detect the absence of said signal if said signal is currently detected (figs. 3, 313, 320, 315, 322, fig. 5A, 511, 513,515,517,519, col.3, lines 20-57,col.9, lines 3-10).

(5) with regards to claim 27;

Labedz et al further discloses wherein said system comprises a digital receiver (figs. 2A, 2B and f3, col. 3, lines 11-26, col. 5, lines 31-52).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE TAYONG whose telephone number is (571)270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helene Tayong/
Examiner, Art Unit 2611

June 20, 2009

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611